REMARKS

A. Claim Rejections - 35 U.S.C. § 102

Claims 21-22 and 24 have been rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 6,479,359 to Kim. To expedite prosecution of the present application, claims 21-22 and 24 have been canceled. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(b) is respectfully requested.

B. Claim Rejections - 35 U.S.C. § 103

1. Rejections Including U.S. Patent No. 6,809,402 to Hopper

Claims 1 and 2 have been rejected under 35 U.S.C. § 103(a) over Kim in view of Hopper. Claims 1-3 and 5-6 have been rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,137,126 to Avanzino in view of Kim and further in view of Hopper.

Hopper only qualifies as a reference under 35 U.S.C. § 102(e), was developed by another person and was, at the time of the invention, owned by the same entity or subject to an obligation of assignment to the same entity as the claimed invention. Therefore, in accordance with 35 U.S.C. § 103(c)(1), inclusion of Hopper in a combination of references to establish a rejection under 35 U.S.C. § 103(a) shall not preclude patentability.

2. Claims 23 and 25-27

Claim 23 has been rejected under 35 U.S.C. § 103(a) over Kim in view of Avanzino. Claims 25-26 have been rejected under 35 U.S.C. § 103(a) over Kim in view of U.S. Patent No. 6,372,569 to Lee. Claim 27 has been rejected under 35 U.S.C. § 103(a) over Kim in view of Hopper. To expedite prosecution of the present application, claims 23 and 25-27 have been canceled.

3. Claims 28-30 (Avanzino in view of Lee)

Claims 28-30 have been rejected under 35 U.S.C. § 103(a) over Avanzino in view of Lee.

Independent claim 28 includes the steps of forming spacers that have etch selectivity with respect to silicon oxide and silicon nitride on sidewalls of a gate electrode, and etching a contact aperture to expose a source/drain and a portion of the adjacent spacer. The claimed gate electrode operatively defines a channel between the source and drain.

Furthermore, the contact aperture is filled with a conductive material to form a contact that is electrically coupled to the source/drain and touches the spacer in the exposed portion. But, as claimed, the contact is electrically isolated from the gate electrode and the spacer provides physical and electrical isolation between the contact and the gate electrode.

None of Avanzino, Lee nor their combination teach or reasonably suggest the claimed subject matter.

It is acknowledged that Avanzino forms a spacer from silicon carbide. However, as indicated by the Examiner at page 11 of the Action, Avanzino does not disclose "forming a contact mask over the interlevel dielectric layer and etching a contact aperture to expose a source/drain region; and filing the contact aperture with a conductive material to form a contact that is electrically coupled to one of the source or drain and is electrically isolated from the gate electrode, the contact touching the spacer in the portion exposed by the etching and the spacer providing physical and electrical isolation between the contact and the gate electrode."

Lee does not cure the deficiencies of Avanzino. In particular, Lee's contact 92 is disclosed as being separated from the spacers 42 by each of oxide liner layer 50b and hydrogen rich silicon nitride layer 52. This configuration is best shown in figure 7.

Accordingly, even if one were to combine the references, the present invention would not result. Missing from the combination would be a source/drain contact that touches the spacer, but where the spacer physically and electrically isolates the contact from the gate that defines a channel associated with the contacted source/drain. Additional unmotivated modifications to the combined disclosure of Avanzino and Lee would be required to arrive at the claimed invention.

For at least these reasons, claim 28 patentably defines over the combination of Avanzino and Lee. Claims 29 and 30 depend from claim 28 and patentably define over the combination of Avanzino and Lee for at least the same reasons.

4. Claims 28, 31 and 33-35 (Kim in view of Lee)

Claims 28, 31 and 33-35 have been rejected under 35 U.S.C. § 103(a) over Kim in view of Lee.

Independent claim 28 includes the steps of forming spacers that have etch selectivity with respect to silicon oxide and silicon nitride on sidewalls of a gate electrode, and etching a contact aperture to expose a source/drain and a portion of the adjacent spacer. The claimed gate electrode operatively defines a channel between the source and drain.

Furthermore, the contact aperture is filled with a conductive material to form a contact that is electrically coupled to the source/drain and touches the spacer in the exposed portion. But, as claimed, the contact is electrically isolated from the gate electrode and the spacer provides physical and electrical isolation between the contact and the gate electrode.

None of Kim, Lee nor their combination teach or reasonably suggest the claimed subject matter.

As a stated object of Kim, Kim's spacer 25 is made from a low resistance material to reduce the height of Kim's gate stack and the gate resistance (column 2, lines 4-9, as well as column 3, lines 4-40; abstract and column 1, lines 11-16). Since Kim's spacer 25 assists to define the electrical characteristics of the overall gate, the spacers 25 are best considered electrically interactive with the gate 23, if not part of the overall gate.

As such, Kim teaches away from the claimed invention since Kim's spacer arrangement would not serve to electrically isolate a source/drain contact from the gate in the claimed manner. Rather, Kim includes a gate protection insulating layer 28 made

from silicon nitride over the gate assembly, which includes spacer 25 (column 3, lines 60-67).

It is acknowledged that Kim includes a spacer 24 that conforms to the gate 23 and lies between the spacer 25 and the gate 23. However, if one were to etch a contact opening to expose the disclosed spacer 24 and form a contact in the claimed manner, the spacer 25 would also be exposed and contacted by the contact. The result would be electrical interaction between Kim's gate (by interaction with spacer 25) and the contact.

Lee does not cure the deficiencies of Kim. In particular, Lee's contact 92 is disclosed as being separated from the spacers 42 by each of oxide liner layer 50b and hydrogen rich silicon nitride layer 52. This configuration is best shown in figure 7.

Accordingly, even if one were to combine the references, the present invention would not result. Missing from the combination would be a source/drain contact that touches the spacer, but where the spacer physically and electrically isolates the contact from the gate that defines a channel associated with the contacted source/drain. Additional unmotivated modifications to the combined disclosure of Kim and Lee would be required to arrive at the claimed invention.

For at least these reasons, claim 28 patentably defines over the combination of Kim and Lee. Claims 31 and 33-35 depend from claim 28 and patentably define over the combination of Kim and Lee for at least the same reasons.

5. Claim 32

Claim 32 was not explicitly rejected. However, claim 32 depends from claim 28 and patentably defines over the various combinations of references for at least the reasons set forth above.

6. Withdrawal of Rejections Under 35 U.S.C. § 103(a) is Requested

Reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

C. Conclusion

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned representative to expedite prosecution of the present application.

If there are any fees resulting from this communication, please charge same to our Deposit Account No. 18-0988, our Order No. H1604.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, LLP

By _____
M. David Galin; Reg. No. 41,767

1621 Euclid Avenue
Nineteenth Floor
Cleveland, Ohio 44115
Telephone: (216) 621-1113
Facsimile: (216) 621-6165

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